

WHAT IS CLAIMED IS:

1. An idle handoff controlling method in a cellular mobile communication system, said method comprising the steps of:

5 a) searching a first pilot channel having the strongest strength transmitted from one of a plurality of base stations as an active base station and measuring a strength of the first pilot channel;

10 b) <sup>calculating</sup> ~~calculating~~ a variable threshold value based on the first pilot channel strength measured in step a);

c) monitoring a paging channel having a neighbor list of the active base station having a plurality of neighbor base stations in synchronization with the first pilot channel;

15 d) measuring a strength of a second pilot signal transmitted from one of the plurality of neighbor base stations included on the neighbor list;

e) subtracting the first pilot channel strength from the second pilot channel strength to obtain a strength difference;

20 f) judging whether the strength difference is greater than the variable threshold value; and

g) controlling performance of an idle handoff according to the judgement result of step f).

25 2. The method as claimed in claim 1, wherein the variable threshold value is proportional to the first pilot signal strength measured in step a).

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3. The method as claimed in claim 1, wherein the variable threshold value is increased by a predetermined integer times of the first pilot channel strength with respect to the active base when the first pilot channel strength is increased.

4. The method as claimed in claim 1, wherein no matter how small the first pilot channel strength is, the variable threshold value is greater than a predetermined value.

5. The method as claimed in claim 1, wherein when the first pilot channel strength has a discrete value, the variable threshold value discretely changes.

6. The method as claimed in claim 1, wherein when the strength difference is greater than the variable threshold value in step f), step g) include performing an idle handoff with respect to the mobile station.

7. The method as claimed in claim 1, wherein when the strength difference is less than or equal to the threshold value in step f), step g) includes

g-1) judging whether an executing number of step f) is greater than the total number of the neighbor base stations;

g-2) searching for the first pilot channel having the

strongest strength presently transmitted from the active base station when the executing number of step f) is smaller than or equal to the total number of the neighbor base stations and increasing the number of a neighbor base station message to be processed; and

g-3) executing step d).

8. An idle handoff controlling method in a cellular communication system, said method comprising the steps of:

i) searching a first pilot channel having the strongest strength transmitted from one of the plurality of base stations as an active base station and measuring a strength of the first pilot channel;

ii) monitoring a paging channel having a neighbor list of the active base station which has a plurality of neighbor base stations in synchronization with the first pilot channel;

iii) measuring a strength of a second pilot signal transmitted from one of the plurality of neighbor base stations in the neighbor list neighboring the active base station;

iv) subtracting the first pilot channel strength from the second pilot channel strength to obtain a strength difference;

v) judging whether the strength difference is greater than a threshold value;

vi) judging whether a state that the strength difference is greater than the threshold value lasts for a predetermined time interval when the strength difference is greater than the

threshold; and

vii) controlling performance of an idle handoff according to a judgement result of step vi).

5           9. The method as claimed in claim 8, wherein when the strength difference is greater than the threshold value in step v), the method further comprising

viii) judging whether an executing number of step v) is greater than the total number of the neighbor base stations;

10           ix) searching for the first pilot channel having the strongest strength presently transmitted from the active base station when the executing number of step v) is smaller than or equal to the total number of the neighbor base stations and increasing the number of a neighbor base station message to be  
15           processed; and

x) executing step iii).

20           10. The method as claimed in claim 8, wherein when the state that the strength difference is greater than the threshold value lasts for the predetermined time interval in step vi), step vii) includes performing an idle handoff with respect to the mobile station.

25           11. The method as claimed in claim 8, wherein when the state that the strength difference is greater than the threshold value lasts for a time interval shorter than the

predetermined time interval in step vi), step vi) includes

vi-1) judging whether an executing number of step v) is greater than the total number of the neighbor base stations;

vi-2) searching for the first pilot channel having the strongest strength presently transmitted from the active base station when the executing number of step v) is smaller than or equal to the total number of the neighbor base stations and increasing the number of a neighbor base station message to be processed; and

vi-3) executing step iii).

12. The method as claimed in claim 8, wherein step vi) includes

vi-1) counting a time interval in which the strength difference greater than the threshold value lasts; and

vi-2) judging whether the time interval counted in vi-1) is greater than a predetermined time interval.

~~13.~~ An idle handoff controlling method, said method comprising the steps of:

(A) searching a first pilot channel having the strongest strength transmitted from one of <sup>a</sup>~~the~~ plurality of base stations as an active base station and measuring a strength of the first pilot channel;

(B) monitoring a paging channel having a neighbor list of the active base station which has a plurality of neighbor base

stations in synchronization with the first pilot channel and storing the neighbor list;

(C) measuring a strength of a second pilot signal transmitted from one of the plurality of neighbor base stations in the neighbor list neighboring the active base station;

(D) subtracting the strength of the first pilot signal from the strength of the second pilot signal to obtain a strength difference;

(E) judging whether the strength difference is greater than a threshold value;

(F) judging whether step (E) is performed by a predetermined number; and

(G) controlling performance of an idle handoff according to a judgement result of step F).

14. The method as claimed in claim 13, wherein when the state that the strength difference is greater than the threshold value lasts for the predetermined time interval in step (E), step (F) includes performing an idle handoff with respect to the mobile station.

15. The method as claimed in claim 13, wherein step (F) includes

(F-1) counting performance number of step (E); and

(F-2) judging whether a counting number by the counting operation of (F-1) is larger than the predetermined number.